

REMARKS

This Response responds to the Office Action dated July 18, 2003 in which the Examiner rejected claims 1-4, 6, 10-12 and 14-15 under 35 U.S.C. §102(b), rejected claims 5, 8-9, 13 and 16 under 35 U.S.C. §103, rejected claims 1-14 and 20-21 under the judicially created doctrine of obviousness-type double patenting and objected to claims 7 and 20-21 as being dependent upon a rejected base claim but would be allowable if rewritten in independent form.

Claim 1 claims a dry forming apparatus comprising a mold-transfer mechanism, a press driving mechanism, a connecting mechanism and a unit holding mechanism. The mold-transfer mechanism transfers a mold containing a die and punch units at least between a powder supply stage, a pressing stage and a formed-product removing stage. The pressing driving mechanism drives the punch units for pressing in the pressing stage. The connecting mechanism connects the punch units to the pressing driving mechanism when the mold is transferred to the pressing stage and releases the connection of the punch units. The unit holding mechanism holds the punch units while the units are transferred to the next stage.

Through the structure of the claimed invention having a) a mold-transfer mechanism for transferring both the mold and punch units between a plurality of stages, b) a connecting mechanism for connecting the punch units when the mold is transferred to the pressing stage and c) a unit holding mechanism for holding the punch units when the punch units are transferred to the next stage, as claimed in claim 1, the claimed invention provides a dry forming apparatus in which positional accuracy and height accuracy of the

punch units at forming can be enhanced while being able to handle different types of formed products. The prior art does not show, teach or suggest the invention as claimed in claim 1.

Claims 1-4, 6, 10-12 and 14 were rejected under 35 U.S.C. §102(b) as being anticipated by *Hudson* (U.S. Patent No. 4,789,323).

Applicants respectfully traverse the Examiner's rejection of the claims under 35 U.S.C. §102(b). The claims have been reviewed in light of the Office Action, and for reasons which are set forth below, applicants respectfully request the Examiner withdraws the rejection to the claims and allows the claims to issue.

Hudson appears to disclose the field of formed graphite rings for use as shaft packing. (col. 1, lines 6-7) In operation the base graphite is rolled to the appropriate thickness and inserted into the tube 48 and urged toward the bottom thereof by air pressure, gravity, springs or any other means for urging the material through the tube 48. The hollow column of graphite thus formed will rest on the upper surface of the dial feeder 13 while the dial feeder is in motion. The dial feeder 13 comes to rest at the end of each up stroke of the ram 12 with a die 16 aligned beneath the tube 48, another die 16 aligned beneath punch 18, and another die 16 aligned beneath the ejector 42. As the ram 12 descends on the compression stroke pulley system 57 urges the knife 56 beneath the tube 48 between the tube 48 and the dial feeder 13 thereby severing the GRAFOIL within the die 16 from the GRAFOIL remaining in the tube. Simultaneously, punch 18 descends. The pin-like member 34 abuts pin 23 and stops as the cylindrical member descends through die 16 and into collar 21 around pin 23. The force exerted by the ram compresses the spring

24 until the movable die element 26 is seated. Compression of the base graphite occurs within the collar 21 between the punch 18 and movable die element 26. The movable die element 26 may be connected to a plate 59 which is also connected to the press plate 27 by a spring 61 such that the ram 12 is coupled to the movable die element 26 to assure that the springs 24 return the element 26 to their full up position during the up stroke of the ram 12 and before the dial feeder 13 begins to rotate. The repositioning of the movable die element 26 places the compressed graphite ring back within the preforming die 16. Also simultaneously on the down stroke of ram 12 ejector 42 urges a previously compressed ring downwardly out of die 16 and through the table top 11. As soon as the registry finger 39 is retracted from aperture 17, the drive rod 44 engages the ratchet drive 46 and causes the dial feeder 13 to rotate an angular increment equal to the spacing between the apertures 14. When the rotation stops the empty die 16 is positioned beneath tube 48, a die 16 filled with uncompressed graphite is beneath the punch 18, and a die 16 containing the just compressed ring is beneath the ejector 42. (col. 4, line 39 through col. 5, line 14)

Thus, *Hudson* merely discloses a dial feeder 13, a punch 18 mounted on a press plate 27 and a lower punch or pin 23. Nothing in *Hudson* shows, teaches or suggests a mold-transfer mechanism for transferring both 1) a mold containing a die and 2) punch units as claimed in claim 1. Rather, *Hudson* merely discloses rotating a dial feeder 13, but the punch 18 and pin 23 remain stationary (i.e. are not transferred).

Additionally, since *Hudson* does not disclose that the punch 18 and pin 23 move, nothing in *Hudson* shows, teaches or suggests a) a connecting mechanism for connecting the punch units to a punch driving mechanism when a mold is transferred to the pressing

stage or b) a unit holding mechanism for holding the punch units when the punch units are transferred to the next stage as claimed in claim 1.

Since nothing in *Hudson* shows, teaches or suggests a) a mold-transfer mechanism for transferring both a mold and punch units, b) a connecting mechanism for connecting the punch units when the mold is transferred to the pressing stage and c) a unit holding mechanism for holding the punch units while the punch units are transferred to the next stage, as claimed in claim 1, applicants respectfully request the Examiner withdraws the rejection to claim 1 under 35 U.S.C. §102(b).

Claims 2-4, 6, 10-12 and 14 depend from claim 1 and recite additional features. Applicants respectfully submit that claims 2-4, 6, 10-12 and 14 would not have been anticipated by *Hudson* within the meaning of 35 U.S.C. §102(b) at least for the reasons as set forth above. Therefore, applicants respectfully request that the Examiner withdraws the rejection to claims 2-4, 6, 10-12 and 14 under 35 U.S.C. §102(b).

Claims 1-4, 11 and 14-15 were rejected under 35 U.S.C. §102(b) as being anticipated by *Kurata* (U.S. Patent No. 5,686,118).

Applicants respectfully traverse the Examiner's rejection of the claims under 35 U.S.C. §102(b). The claims have been reviewed in light of the Office Action, and for reasons which will be set forth below, applicants respectfully request the Examiner withdraws the rejection to the claims and allows the claims to issue.

Kurata appears to disclose an apparatus for compression-forming powder which is fed into forming chambers of dies. (col. 1, lines 8-10) An intermediate plate 11 is horizontally provided at an intermediate position of the frame section 1b of the apparatus

body 1. A through hole 12 is provided at the central area of the intermediate plate 11 to allow the main shaft 4 to be inserted there. Four dies 13 are located around the through hole 12 in predetermined intervals, for example, in 90° intervals as shown in FIG. 4. The respective dies 13 are fixedly retained by die plates 14, respectively, as shown in FIG. 2. A forming chamber 13a rectangular in cross-section extends through the die 13 in its thickness direction. A lower punch 31 is provided on the lower surface side of the intermediate plate 11 in a position corresponding to the die 13. An upper punch 15 is arranged above the upper surface side of the intermediate plate 11 in an area corresponding to die 13. (col. 3, lines 49-62) A lower punch 31 is mounted on the upper end face of a prismatic lower ram 32 slidable along an up/down direction relative to the inner surface of the frame section 1b. The lower ram 32 has its lowering position restricted by a stopper 33 provided on the inner surface of the frame section 1b. (col. 5, lines 27-32)

Thus, Kurata merely discloses fixedly positioned punches 15 and 31. Nothing in *Kurata* shows, teaches or suggests a mold-transfer mechanism for transferring both a mold and punch units as claimed in claim 1. Rather, *Kurata* merely discloses fixedly mounted punches 15, 31.

Since nothing in *Kurata* shows, teaches or suggests transferring punches, nothing in *Kurata* shows, teaches or suggests a) a connecting mechanism for connecting punch units when the mold is transferred to a pressing stage or b) a unit holding mechanism for holding the punch units while the punch units are transferred to the next stage as claimed in claim

Applicants respectfully point out to the Examiner that intermediate plate 11 is not a rotary table but is horizontally provided at an intermediate portion of the frame section of the apparatus body (see column 3, lines 49-51). Furthermore, the intermediate plate cannot rotate and therefore the upper punch 15 which is arranged above the upper surface of the intermediate plate 11 cannot transfer.

Since nothing in *Kurata* shows, teaches or suggests a) a mold transfer mechanism for transferring a mold and punch units, b) a connecting mechanism for connecting the punch units when the mold is transferred to the pressing stage and c) a unit holding mechanism for holding the punch units while the punch units are transferred to the next stage as claimed in claim 1, it is respectfully requested that the Examiner withdraws the rejection to claim 1 under 35 U.S.C. §102(b).

Claims 2-4, 11 and 14-15 depend from claim 1 and recite additional features. Applicants respectfully submit that claims 2-4, 11 and 14-15 would not have been anticipated by *Kurata* within the meaning of 35 U.S.C. §102(b) at least for the reasons as set forth above. Therefore, applicants respectfully request that the Examiner withdraws the rejection to claims 2-4, 11 and 14-15 under 35 U.S.C. §102(b).

Claims 5 and 13 were rejected under 35 U.S.C. §103 as being unpatentable over *Hudson* or *Kurata* and further in view of *Kojima et al* (U.S. Patent No. 5,364,253). Claims 8-9 were rejected under 35 U.S.C. §103 as being unpatentable over *Hudson* or *Kurata* and further in view of *Nakagawa et al* (U.S. Patent No. 5,647,410). Claim 16 was rejected under 35 U.S.C. §103 as being unpatentable over *Hudson* or *Kurata* and further in view of *Shapiro* (U.S. Patent No. 3,677,673).

Applicants respectfully traverse the Examiner's rejection of the claims under 35 U.S.C. §103. The claims have been reviewed in light of the Office Action, and for reasons which will be set forth below, applicants respectfully request the Examiner withdraws the rejection to the claims and allows the claims to issue.

As discussed above, since nothing in the primary references to *Hudson* or *Kurata* shows, teaches or suggests the primary features as claimed in claim 1, applicants respectfully submit that the combination of the primary references with the secondary references will not overcome the deficiencies of the primary references. Therefore, applicants respectfully request the Examiner withdraws the rejection to claims 5, 8-9, 13, and 16 under 35 U.S.C. §103.

The Examiner stated that claims 1-15 conflict with claims 1, 7, 15, 16, 20, 28, 36, 46-49, 52-56 and 65 of Application No. 10/000,067.

Applicants respectfully traverse the Examiner's statement. In particular, applicants respectfully bring the Examiner's attention to §804 of the M.P.E.P. As noted therein, a double patenting rejection must rely on a comparison with the claims. As clearly seen, none of the claims in Application No. 10/000,067 claim a) a unit holding mechanism for holding the punch units while the punch units are transferred to a next stage or b) a connecting mechanism for connecting the punch units when the mold is transferred to the pressing stage as claimed in claim 1. Therefore, applicants respectfully submit that claims 1-15 provide a clear line of demarcation between the present application and Application No. 10/000,067.

Claims 1-14 and 20-21 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 7, 15, 16, 20, 28, 36, 46-49, 52-56 and 65 of Application No. 10/000,067. Applicants respectfully traverse the Examiner's rejection of the claims under the judicially created doctrine of obviousness-type double patenting.

As discussed above, Application No. 10/000,067 does not claim a unit holding mechanism for holding the punch units while the punch units are transferred to the next stage or a connecting mechanism for connecting punch units to a pressing driving mechanism when a mold is transferred to the pressing stage as claimed in claim 1. That is, the claims of Application No. 10/000,067 do not claim the features claimed in at least claim 1. Therefore, applicants respectfully request the Examiner withdraws the rejection to claims 1-14 and 20-22 under the judicially created doctrine of obviousness-type double patenting.

Since objected to claims 7 and 20-21 depend from allowable claims, applicant respectfully request that the Examiner withdraws the objection thereto.

Thus it now appears that the application is in condition for reconsideration and allowance. Reconsideration and allowance at an early date are respectfully requested.

If for any reason the Examiner feels that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed within the currently set shortened statutory period, applicants respectfully petition for an appropriate extension of time. The fees for such extension of time may be charged to our Deposit Account No. 02-4800.

In the event that any additional fees are due with this paper, please charge our Deposit Account No. 02-4800.

Respectfully submitted,

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